

REMARKS

Claims 2, 6, 7-13 and 15-30 remain pending in this application. Claims 2, 6, 7, 23, 26 and 28 have been amended per the above Listing of Claims. Claims 1 and 3-5 have been canceled. Claim 31 has been added per this Amendment.

As amended, Claims 7-9, 11-22, 29 and 30 concern compositions of the present invention that contain inorganic, substantially spherical particles selected from the group consisting of silica, boron nitride, talc, mica, serecite, and mixtures thereof.

As amended, Claims 2, 23-28 and 31 concern compositions of the present invention in which the inorganic, substantially spherical particles are spherical.

Claims 29 limits the compositions of Claim 7 to inorganic, substantially spherical particles selected from the group consisting of silica, boron nitride, mica, serecite, and mixtures thereof. Claim 29 does not recite talc as a species within the Markush group.

Claim 23 limits the composition of Claim 2 to inorganic, spherical particles selected from the group consisting of silica, boron nitride, mica, serecite, and mixtures thereof. That is, the compositions of Claims 19 and 23 do not recite talc as a species within the Markush group.

Section 112 Rejection

Claims 1-13 and 15-20 were rejected under 35 U.S.C. §112, second paragraph, the Examiner stating that the term “substantially spherical” was a relative term, and hence was indefinite. Applicant respectfully traverses this ground for rejection for the reasons stated below.

First, the ordinary meaning of the word “substantially” is quite well understood to have greater definiteness than believed by the Examiner.

The word “substantial” in the Random House compact Unabridged Dictionary (Special 2nd Edition 1996), at page 1899 (copy attached) has among its meanings:

- basic or essential, fundamental; and
- of or pertaining to the essence of a thing; essential, material or important.

Thus, the inorganic particles of the present invention have the essential characteristic of being spherical, although not every particle of the thousands (at least) of particles present in a given composition will, in fact, be perfectly spherical. But it is the sphericalness of the particles that is an important characteristic of the invention, and the invention requires that the particles are substantially spherical.

Applicant also submits that the U.S. Patent and Trademark Office practice does not support the Examiner’s belief that the term “substantially” is indefinite. A claims search on the Delphion website for “substantially spherical” and “particles” appearing in a claim had 226 “hits” for the five year period May 1, 1999 to present (copy attached). Applicant recognizes that in some instances the term “substantially spherical” might have been defined. Nonetheless, in numerous instances the term “substantially spherical” was used in the claims, and without further characterization in the specification.

Applicant provides several instances where this is so:

- U.S. Patent No. 6,656,590 (no definition in specification; see Claim 12);
- U.S. Patent No. 6,656,587 (no definition in specification; see Claims 5, 7, and 31);
- U.S. Patent No. 6,551,377 (no definition in specification; see Claim 1), and

- U.S. Patent No. 6,180,029 (no definition in specification; see Claim 1).

See also, U.S. Patent No. 6,139,597, Claims 4 and 10 containing the term “substantially spherical”, and Claim 1, which contains the phrase “substantially continuous polymer film coating”. The term “substantially” is not defined in either instance.

Copies of the above-identified patents are provided for the Examiner’s convenience as Exhibit A.

Lastly, Applicant notes that Claims 2, 23-28 and 31 recite that the substantially spherical particles are spherical.

In light of the foregoing, reconsideration of the Examiner’s position is respectfully requested.

Section 103 Rejections

A. The December 19, 2003 Office Action states that claims 1-13 and 15-28 were rejected under 35 U.S.C. §103 as being unpatentably over U.S. Patent No. 6,258,345 to Rouquest et al. (“Rouquet”) in view of U.S. Patent No. 5,658,579 to LaFleur et al. (“LaFleur”).

Applicant respectfully traverses this ground for rejection, for the reasons set forth below.

As amended all claims pending in the case concern inorganic particles. Rouquet discloses compositions containing spherical organic particles of less than 10 μm .

Claim 7 of the present invention, however, requires that the substantially spherical particles are inorganic and further requires that the particles be selected from the group consisting of silica, boron nitride, mica, talc, sericite, and mixtures thereof.

LaFleur specifically concerns cosmetic powder compositions comprising talcs of different particle size distributions. LaFleur does not further characterize the talc used, except to

state that it is available from any number of commercial suppliers. LaFleur does not disclose, nor remotely suggest, that the talc present in his composition is substantially spherical. One of ordinary skill in the art, based on the teachings of LaFleur, could only understand LaFleur as utilizing conventional talc.

As previously argued, Applicant submits that talc has a characteristic platy structure occasioned by its chemical structure. The Examiner's attention is again directed to Harry's Cosmeticology, p. 527-8 (8th Edition, 2000) (previously submitted). Additionally the Examiner's attention is directed to Kirk-Othmer, Encyclopedia of Chemical Technology, v. 23, p. 607-17 (4th Edition, 1997). Thus, talc belongs to the general mineral family of layered silicates (p. 607). This layered structure is illustrated in Fig. 4, and "consists of repeating layers of a sandwich of brucite.... between sheets of silica ..." (p. 611). Talc products are thus also "characterized by their crystallinity or relative platiness" (p. 611). The platiness is shown in Fig. 5 (p. 612).

See also Excaliber Mineral Company, Talc Mineral Data, p. 2, at webmineral.com/data/Talc.shtml, in which talc is described as "Foliated - Two dimension platy forms., Scaly - Morphology like fish scales...").

The European Industrial Minerals Association (IMA-Europe) website (www.ima-eu.org) describes talc as platelets of 1 to over 100 microns, which platelet size determines talc's platyness or lamellarity. See Talc, p. 3 of 7. Further, this reference indicates that elementary sheets are stacked on top of one another, like flaky pastry, and because the binding forces in linking an elementary sheet to its neighbor is weak, the plates slide apart (p. 3).

Ciullo, Talc Shape and Form Meet Function, Paint & Coating 2nd Mag., January 2003 (Reprinted at www.rtvanderbilt.com/awards_7.htm), states:

- "talc products are described as platy talc...";

- “The value of platy talc in coatings is derived primarily from its particle shape and surface properties” (p. 5 of 7).

Copies of the Foregoing talc references are enclosed as Exhibit B.

In light of the foregoing, it is quite clear that natural talc is not substantially spherical, or even remotely spherical, absent processing to provide such morphology.

Accordingly, it is improper to utilize LaFleur to resolve the deficiencies of the Rouquet reference. Rouquet concerns spherical organic particles; LaFleur concerns nonspherical (i.e., platy) inorganic talc particles that can include substantial amounts of particles greater than 20 microns. Substituting the LaFleur talc for the organic spherical particles of Rouquet would fail to achieve the intended results of Rouquet, much less those of the present invention. Applicant respectfully submits that all pending claims, as amended, are patentable over this ground of rejection.

Claims 2, 10, 23-28, and 31 are further distinguished from the cited combination of references, as their claims recites that the inorganic, substantially spherical particles to be spherical.

Claims 23-25 and 29, 30 are further distinguished from the cited combination of references, as talc is not a species in the Markush group of these claims.

B. Claim 7, 11-13, 15-20, 25, 29 and 30 were rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 5,853,711 to Nakamura et al. (“Nakamura”) in view of U.S. Patent No. 5,989,510 to Abe et al. (“Abe”).

The Examiner states that Nakamura discloses water-in-oil type emulsions comprising crosslinked organopolysiloxane elastomer spherical powder having an average particle size of 2-5 microns and silica powder having an average particle size of not more than 2 microns.

The Examiner states that Nakamura fails to teach the particle size distribution of the silica powder.

Applicant's review of Nakamura indicates that the silica described therein has an average particle size of not more than 0.2 microns, which is a microfine, submicron silica.

The Examiner cites Abe as teaching granular amorphous silica particles which are spherical and have uniform particle size distribution and filtering property. The Examiner states that Abe teaches a particle size distribution not greater than 2 and particularly not greater than 1.6 (Col. 6, lines 21-43).

Applicant respectfully submits the Examiner has mischaracterized both references, and that neither reference is appropriately cited herein.

As indicated above, Nakamura concerns microfine silica that has a maximum average particle size of not more than 0.2 microns. This is at least five times smaller than the size of Applicant's smallest most inorganic particle.

Secondly, Nakamura's hydrophobic silica is a specially made silica material that not only is not more than 0.2 microns, but has trimethylsilylated or dimethylsilylated hydrophilic hydroxy groups on its surface (See Col. 3, lines 11 et seq.). This adds absorption characteristics to the particles (oil and/or water, depending on group) and thus changes their effect.

Applicant on the other hand utilizes an inorganic spherical particle that is present in a particle size distribution range of 1 to 25 microns, and which is quite different than the Nakamura material. The large sized particles employed by Applicant provide a "ball bearing" effect when applied to the skin. In contrast the 0.2 micron powder of Nakamura is so fine that the particles cake on the skin.

Abe concerns a discovery that a partly neutralized product of an alkali silicate grows into a spherical particle if a carboxymethyl cellulose of predetermined degree of etherification is used in partly neutralizing the silicate.

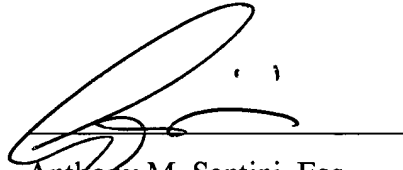
The Abe reference indicates that the silica obtained by this process has a primary particle size of from 0.2 to 50 microns. Thus, it is clear that the silica of Abe cannot be utilized in the Nakamura composition because it does not have trimethyl- or dimethylsilylated hydrophilic hydroxy groups. Moreover, the Abe material (if it could be and were further processed to have trimethylsilylated or dimethylsilylated hydrophilic hydroxy groups) would only be useful in the Nakamura composition if the particle size were limited to the maximum particle size of Nakamura of 0.2 microns. It would be inappropriate to use larger sized Abe silica particles because Nakamura teaches criticality of microfine particles. Thus, all particles made by the Abe process would have to be at the lowermost value of the Abe particle size range in order to meet the maximum particle size permitted by Nakamura. Even assuming this is at all possible (which it is not, because the particles would be obtained in a distribution), there is a difference between the types of particles used by Abe and the types of particles used by Nakamura, which no amount of hindsight can cure, and of course, the defined particle size range of the present invention would still not have been met.

The Examiner refers to Abe at Col. 6, lines 21-43 as disclosing at ratio of D_{25}/D_{75} . This ratio apparently defines the degree of uniformity of particle diameters. However, this ratio does not define the diameters. Thus, there is no basis to conclude that one of ordinary skill in the art should select the granular amorphous silica of Abe having a diameter 50 microns, 40 microns, 10 microns, or any diameter within the range set forth at Col. 5, lines 7-12. To do so is merely a hindsight reconstruction of Applicant's invention herein.

For all of the reasons set forth above, it is respectfully submitted that the claims of the present invention are patentable over the cited combination of references and are in condition for allowance. If there is any item that the Examiner would like to discuss prior to passing this application to allowance, please do not hesitate to contact the undersigned attorney.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Anthony M. Santini', is written over a horizontal line.

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